

Remarks

Amendment to claims

Claim 1 is amended to further emphasize that the insertional mutagen is capable of both a loss of function and a gain of function mutation. Claim 1 was also amended to limit the mutant traits to morphological phenotypes. Claim 10 is cancelled as this claim language was added to Claim 1. Support is provided in the specification for the amendments to the claims.

Claim Rejections 35 U.S.C. § 103

Claims 1, 10, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al. When combining references for an obviousness rejection the Examiner must provide the motivation to combine the references. On page 5 of the Office Action of August 6, 2004, the Examiner has stated a broad motivation to combine the references above “would have been to facilitate evaluation of phenotypic traits in conjunction with genotypic data in a method for breeding plants.” However, the combined references must not teach away from each other, nor may they individually teach away from the present invention.

The Examiner relied upon Briggs for “insertional mutation and plant trait analysis steps and for indexing of results/traits between generations”. Briggs et al. discloses insertion into a gene of known sequence by crossing two parent plants, one of which contains a transposable element. The use of a transposable element in Briggs indicates only loss of function mutation can be detected. The Examiner states that Johnson et al was relied on for teaching use of a database for recording phenotypic traits and genotypes. However, Johnson et al. only teaches use of dominant or co-dominant phenotype, see definition of “marker” in Column 8, lines 19-23 and Claim 11, 16, 18, 21 and 22. Thus, only gain of function mutations are produced. Thus, there is no motivation to combine the Briggs et al. and Johnson et al. and the two references actually teach away from the claimed invention. The cited references also teach away from the claimed invention which insertional mutagen is capable of both a loss of function and a gain of function mutation.

Furthermore, to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art (MPEP §2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). There are several features of claim 1 that are not taught or suggested by either Briggs or Johnson. These include:

- (in part a) generating a random insertion of an insertional mutagen, wherein said insertional mutagen is capable of a loss of function and a gain of function mutation;
- (in part c) assigning a T2 identification number to said [T2] seed, wherein the T2 identification number is linked to the T1 identification number;
- (in part f) recording in the database any mutant traits observed in the analyzed T2 plant that were not present in its parent T1 plant; and
- (in part f) a record is generated that associates the information of the analyzed T2 plant to any information recorded about its parent T1 plant.

Because the Examiner has not provided reasoning as to how the prior art teaches or suggests these claimed features, *prima facie* obviousness has not been established, and the rejections under 35 U.S.C. §103 should be removed.

The Examiner made the following rejections against dependent claims: Claims 5-6 and 20-21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al. and further in view of Tissier et al and Speulman et al.; Claims 2-3, 9, 22-25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al., Tissier et al and Speulman et al. and further in view of Neff et al.; Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al., Tissier et al., Speulman et al., and Neff et al. and further in view of Dey et al. Claims 7, 11 and 18-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al., Tissier et al., Speulman et al. and Neff et al. and further in view of Bhide et al.; Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al., Tissier et al., Speulman et al., Neff et al. and further in view of Williams; and Claim 17 was rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. in view of Johnson et al., Tissier et al., Speulman et al., Neff et al. and Bhide et al., and further in view of Sandvik et al.

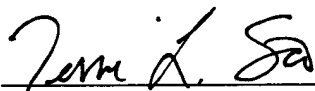
However, if an independent claim is nonobvious under 35 USC 103, then any claim depending therefrom is nonobvious (*In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). Accordingly, the rejections raised against the dependent claims are not addressed herein. Applicants make no admissions or concessions regarding the Examiner's assertions with respect to what the additional cited references disclose and their relevance to the claimed invention.

Closing remarks

It is believed that all of the rejections are overcome, and that the claims are in condition for allowance. The examiner is encouraged to telephone the undersigned to discuss any further issues that may need resolution prior to allowance.

Respectfully submitted,

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Terri L. Sale Reg. No. 45,066

EXELIXIS, INC.

170 Harbor Way, P.O. Box 511
South San Francisco, California 94083-0511
Telephone: (650) 837-8180
Facsimile: (650) 837-8234